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TEC Work No. : BA0715-10
Ref No. : KBP(T)-PC-TEC/KOS-1578T
TEC Work No. : BA0715-30
Date : June 07, 2006**Attn. : Mr. V.A. Chernov, Director (BPA Plant)**
Mr. F. G. Minigulov, Director (PC Plant)**Subject : KBP PROJECT – BPA PLANT****Issuance of Material Comparison Table for Piping Material**

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00T9321/B-001	0	Material Comparison Table for Piping Material	1C

Note : We are herewith sending the Piping Document which is for material comparison for piping material among ASME, ASTM, JIS and GOST as per chemical composition and mechanical properties.

Signed by


T. Isomae, Project Manager
KBP Project

[Copy To:]

Mr. D.V. Shtatnov, Chief Engineer (BPA Plant)
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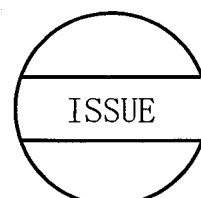
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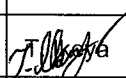
MATERIAL COMPARISON TABLE FOR PIPING MATERIALS

KBP PROJECT

DWG. NO. 00T9321 / B - 001



 **TOYO ENGINEERING CORPORATION**
TOKYO JAPAN

0	JUN.07 2006	FOR INFORMATION	 H. G. Kim	H. Horita	 T. Isemae	T. Isemae
REV	DATE	DESCRIPTION	Prepared	Checked	Approved	Authorized

Material Comparison Table : ASME-ASTM-JIS-GOST

STEEL GRADE МАРКА СТАЛИ	CHEMICAL COMPOSITION ХИМИЧЕСКИЙ СОСТАВ												MECHANICAL PROPERTIES МЕХАНИЧЕСКИЕ СВОЙСТВА			STEEL GRADE as per GOST, OST, TU
	Carbon	Silicon	Manganese	Phosphorous	Sulfur	Chromium	Nickel	Molybdenum	Copper	Aluminium	Titanium	Vanadium	Tensile strength Предел прочности σ _B	Yield point Предел текучести σ _T	Elongation Относительное удлинение δ	
	Углерод C max. %	Кремний Si max. %	Марганец Mn max. %	Фосфор P max. %	Серa S max. %	Хром Cr max. %	Никель Ni max. %	Молибден Mo max. %	Медь Cu max. %	Алюминий Al max. %	Титан Ti max. %	Ванадий V max. %	min (N/mm ²)	min (N/mm ²)	%	
ASME/ASTM/JIS/DIN																МАРКА СТАЛИ по ГОСТ, OCT, TY
Sheet Лист																
A131Gr.B	0.21	0.35	0.80-1.10	0.035	0.04								400-490	235	24	Cr4cn, ГОСТ 14637
JIS G3106 SM400B	0.2	0.35	0.60-1.40	0.035	0.035								400-510	235	18	
A240-Type 304	0.08	0.75	2	0.045	0.03	18.00-20.0	8.0-10.0						515	205	40	08X18H10, 08X18H10T
DIN 1.4301 X5CrNi18-10	0.07	1	2	0.045	0.03	17.0-20.0	8.5-10.0						500-700	185	45	ГОСТ 5582, ГОСТ 7350
JIS G4303 SUS304	0.08	1	2	0.045	0.03	18.00-20.0	8.0-10.5						520	205	40	
A240-Type 304L	0.03	0.75	2.00	0.045	0.03	18.00-20.00	8.00-12.00			(N: max. 0.10)			485	170	40	03X18H11, ГОСТ 5582
DIN 1.4306, X2CrNi 19-11	0.03	1.00	2.00	0.045	0.015	18.0-20.0	10.0-12.0			(N: max. 0.11)			460-680	180	45	
A240-Type 316H	0.04-0.10	0.75	2.00	0.045	0.03	16.00-18.00	10.00-14.00	2.00-3.00					515	205	40	10X17H13M2T, ГОСТ 7350, ГОСТ 5582
A240-Type 316	0.08	0.75	2.00	0.045	0.03	16.00-18.00	10.00-14.00	2.00-3.00		(N: max. 0.10)			515	205	40	10X17H13M2T, ГОСТ 7350, ГОСТ 5582
DIN 1.4401, X5CrNiMo17-12-2	0.07	1.0	2.00	0.045	0.03	16.5-18.5	10.5-13.5	2.0-2.5					510-710	205	40	
A240-Type 316L	0.03	0.75	2.00	0.045	0.03	16.00-18.00	10.00-14.00	2.00-3.00		(N: max. 0.10)			485	170	40	03X17H14M3, TY 14-1-5071, TY 14-1-
DIN 1.4404, X2CrNiMo17-13-2	0.03	1.00	2.00	0.045	0.015	16.5-18.5	10.0-13.0	2.00-2.50		(N: max. 0.11)						-5056, TY 14-1-5073, TY 141-1-5054
A240-Type 321	0.08	0.75	2.00	0.045	0.03	17.00-19.00	9.00-12.00			(N: max. 0.10)	5x(C+N) min., 0.70 max.		515	205	40	08X18H10T, ГОСТ 5582,
DIN 1.4541, X6CrNiTi 18-10	0.08	1.00	2.00	0.045	0.015	17.0-19.0	9.00-12.0				5xC-0.7		500-700	190	40	ГОСТ 7350
A240-Type 347	0.08	0.75	2.00	0.045	0.03	17.00-19.00	9.00-13.00			(Cb: 10xC min., 1.00 max.)			515	205	40	08X18H12Б, ГОСТ 7350
DIN 1.4550, X6CrNiNb 18-10	0.08	1.00	2.00	0.045	0.015	17.0-19.0	9.00-12.0			(Cb: 10xC min., 1.00 max.)			510-740	205	40	
A240-Type 410	0.15	1.00	1.00	0.04	0.03	11.50-13.50	0.75						450	205	20	12X13, ГОСТ 7350
DIN 1.4006, X12Cr13	0.08-0.15	1.00	1.5	0.04	0.015	11.5-13.5	0.75						max. 730	-	20	
A283Gr.C	0.24	0.4	0.9	0.04	0.035								380-485	205	25	BCr3cn, ГОСТ 14637
DIN 1.0036 USt37-2 (3<t<=16)	0.17			0.05	0.05					(N: max. 0.007)			340-470	235	26	
DIN 1.0036 USt37-2 (16<t<=40)	0.2			0.05	0.05								340-470	225	25	
JIS G3101 SS400				0.05	0.05								400-510	215	24	
A285Gr.C	0.28		0.9	0.035	0.035								380-515	205	27	BCr3cn, ГОСТ 14637
A515Gr.55	0.2	0.15-0.40	0.9	0.035	0.035								380-515	205	27	
JIS G3103 SB410	0.24	0.15-0.30	0.9	0.035	0.04								410-550	225	21	
A387Gr.5 CL.1	0.15	0.5	0.30-0.60	0.035	0.03	4.00-6.00		0.45-0.65					415-585	207	18	15X5M, ГОСТ 7350
JIS G4109 SCM V6-1	0.15	0.5	0.30-0.60	0.03	0.03	4.00-6.00		0.45-0.65					410-590	205	18	
A387Gr.5 CL.2	0.15	0.5	0.30-0.60	0.035	0.03	4.00-6.00		0.45-0.65					515-690	310	18	15X5M, ГОСТ 7350
DIN 1.7362, 12CrMo19 5	0.08-0.15	0.5	0.30-0.60	0.025	0.02	4.00-6.00		0.45-0.65					590-740	390	17	
A387Gr.9 CL.1	0.15	1	0.30-0.60	0.03	0.03	8.00-10.0		0.90-1.10					415-585	207	18	There is no equivalent. аналога нет
A387Gr.9 CL.2	0.15	1.00	0.30-0.60	0.03	0.03	8.00-10.00		0.90-1.10					515-690	310	18	There is no equivalent. аналога нет
DIN 1.4903, X10CrMoVNb9-1	0.08-0.12	0.20-0.50	0.30-0.60	0.02	0.01	8.00-9.50	0.4	0.85-1.05			(Nb: 0.06-0.10)	0.18-0.25				
A387Gr.11 CL.2	0.05-0.17	0.50-0.80	0.40-0.65	0.035	0.035	1.00-1.50		0.45-0.65					515-690	310	22	12XM, ГОСТ 5520
DIN 1.7335 13CrMo4 4 (16<=t)	0.08-0.18	0.10-0.35	0.40-1.0	0.035	0.03	0.70-1.10		0.40-0.60	0.3				440-590	300	20	
DIN 1.7335 13CrMo4 4 (16<t<=40)	0.08-0.18	0.10-0.35	0.40-1.0	0.035	0.03	0.70-1.10		0.40-0.60	0.3				440-590	295	20	
JIS G4109 SCMV3	0.17	0.44-0.86	0.36-0.69	0.03	0.03	0.94-1.56		0.40-0.70					410-590	235	22	
A387Gr.22 CL.2	0.05-0.15	0.5	0.30-0.60	0.035	0.035	2.00-2.50		0.90-1.10					515-690	310	45	10X2M1A, TY 302.02.121
DIN 1.7380 10CrMo9-10 (t<=16)	0.06-0.15	0.15-0.50	1.00-1.30	0.035	0.03	0.25	0.3	0.1	0.3	0.02	0.03	0.03	510-650	355	20	
DIN 1.7380 10CrMo9-10(16<t<=40)	0.15-0.22	0.30-0.60	1.00-1.30	0.035	0.03	0.25	0.3	0.1	0.3	0.02	0.03	0.03	510-650	345	20	
JIS G4109 SCMV4	0.17	0.5	0.27-0.63	0.03	0.03	1.88-2.62		0.85-1.15					410-590	205	18	
A515Gr.65	0.33	0.15-0.40	0.9	0.035	0.035								450-585	240	23	16ГC, ГОСТ 19281
JIS G3103 SB450	0.28	0.15-0.30	0.9	0.035	0.04								450-590	245	19	
A515Gr.70	0.35	0.15-0.40	1.2	0.035	0.035								485-620	260	21	09Г2C, ГОСТ 5520
JIS G3103 SB480	0.2	0.15-0.30	0.9	0.035	0.04			0.45-0.6					480-620	275	17	
A516Gr.60	0.23	0.15-0.40	0.85-1.20	0.035	0.035								380-515	205	27	16ГC, ГОСТ 5520
SLA235B	0.15	0.15-0.30	0.70-1.50	0.03	0.025								400-510	235	18	
DIN 1.0425 H II (t<=16)	0.2	0.35	0.50-1.30	0.035	0.03	0.25	0.3	0.1	0.3	0.02	0.03	0.03	410-530	265	22	
DIN 1.0425 H II (16<t<=40)	0.2	0.35	0.50-1.30	0.035	0.03	0.25	0.3	0.1	0.3	0.02	0.03	0.03	410-530	255	22	
JIS G3115 SPV235	0.18	0.15-0.35	1.4	0.03	0.03								400-510	235	24	
A516Gr.65	0.29	0.15-0.40	0.85-1.20	0.035	0.035								450-585	240	23	09Г2C, 10ГC, ГОСТ 5520
JIS G3106 SM400B	0.2	0.35	0.60-1.4	0.035	0.035								400-510	235	18	
A516Gr.70	0.28	0.15-0.40	0.85-1.20	0.035	0.035								485-620	260	21	09Г2C, ГОСТ 19281
DIN 1.0482 19Mn5 (t<=16)	0.15-0.22	0.30-0.60	1.00-1.30	0.035	0.03	0.25	0.3	0.1	0.3	0.02	0.03	0.03	510-650	355	20	
DIN 1.0482 19Mn5 (16<t<=40)	0.15-0.22	0.30-0.60	1.00-1.30	0.035	0.03	0.25	0.3	0.1	0.3	0.02	0.03	0.03	510-650	345	20	
JIS G3115 SPV315	0.18	0.15-0.55	1.5	0.03	0.03								490-610	295	23	
B127(N04400)	0.3	0.5	2		0.024		min. 63.0		28.0-34.0		(Fe: max. 2.5)		485	195	35	HMЖMц 28-2, 5-1, 5, ГОСТ 5063
DIN 2.4360 NiCu30Fe	0.15	0.5	2		0.02		min. 63.0		28.0-34.0	0.5	0.3	(Fe: 1.0-2.5)				
JIS H4551 NCuP	0.3	0.5	2		0.024		63.0-70.0		27.0-34.0		(Fe: max. 2.5)		481	196	35	
B168(N06600)	0.15	0.5	1		0.015	14.00-17.0	min. 72.0		0.5		(Fe: 6.0-10.0)		550	240	30	XH78T, ГОСТ 24982
DIN 2.4851 NiCr23Fe	0.03-1.00	0.5	1	0.02	0.015	21.0-25.0		58.0-63.0	0.5	1.00-1.70	0.5	(Fe: 18)				
JIS G4902 NCF600	0.15	0.5	1	0.03	0.015	14.00-17.0	min. 72.0		0.5		(Fe: 6.0-10.0)		520	205	30	
B409(N08800)	0.1	1	1.5		0.015	19.00-23.0	30.0-35.0		0.75	0.15-0.60	0.15-0.60		520	205	30	XH32T, TY 14-1-625
DIN 1.4876 X10NiCrAlTi32-21	0.12	1	2	0.03	0.015	19.0-23.0	30.0-34.0			0.15-0.60	0.15-0.60		500-680	170	30	
JIS G4902 NCF800	0.1	1	1.5	0.03	0.015	19.00-23.0	30.0-35.0		0.75	0.15-0.60	0.15-0.60		550	245	30	

Material Comparison Table : ASME-ASTM-JIS-GOST

STEEL GRADE МАРКА СТАЛИ	CHEMICAL COMPOSITION ХИМИЧЕСКИЙ СОСТАВ												MECHANICAL PROPERTIES МЕХАНИЧЕСКИЕ СВОЙСТВА			STEEL GRADE as per GOST, OST, TU
	Carbon	Silicon	Manganese	Phosphorous	Sulfur	Chromium	Nickel	Molybdenum	Copper	Aluminium	Titanium	Vanadium	Tensile strength Предел прочности σ _B	Yield point Предел текучести σ _T	Elongation Относительное удлинение δ	
	Углерод C max. %	Кремний Si max. %	Марганец Mn max. %	Фосфор P max. %	Сера S max. %	Хром Cr max. %	Никель Ni max. %	Молибден Mo max. %	Медь Cu max. %	Алюминий Al max. %	Титан Ti max. %	Ванадий V max. %	min (N/mm ²)	min (N/mm ²)	%	
Pipe (Seamless) Трубы (бесшовные)																
API 5L Gr.B	0.27		1.15	0.04	0.05								413	241	25	10Г2, ГОСТ 550, ГОСТ 8731, ГОСТ 8733
DIN 1.0254 St 37	0.17			0.04	0.04					(N: max. 0.009)			350-480	235	25	
JIS G3454 STPG370	0.25	0.35	0.30-1.00	0.04	0.04								370	215	30	
A53Gr.A	0.25		0.95	0.05	0.045	0.4	0.4	0.15	0.4			0.08	330	205	40	Сталь 20,
A53Gr.B	0.3		1.2	0.05	0.045	(0.40)	(0.40)	(0.15)	(0.40)			(0.08)	415	240	33	
DIN 1.0254 St 37	0.17			0.04	0.04					(N: max. 0.009)			350-480	235	25	
JIS G3454 STPG370	0.25	0.35	0.30-1.00	0.04	0.04								370	215	30	ГОСТ 8733
SA53Gr.B	[Cm. A53Gr.B]												410	245	25	
A106Gr.B	0.35	0.1	0.29-1.06	0.035	0.035	(0.40)	(0.4)	(0.15)	(0.40)			(0.08)	415	240	30	
SA106Gr.B	[Cm. A106Gr.B]															Сталь 20, ГОСТ 550, ГОСТ 8731, ГОСТ 8733
DIN 1.0256 St 44	0.21			0.04	0.04					(N: max. 0.009)			420-550	275	21	
JIS G3455 STS410	0.3	0.10-0.35	0.30-1.40	0.035	0.035								410	245	25	
JIS G3456 STPT410	0.3	0.10-0.35	0.30-1.00	0.035	0.035											Сталь 20, ГОСТ 550, ГОСТ 8731, ГОСТ 8733
A312Gr.TP304	0.08	0.75	2	0.04	0.03	18.00-20.0	8.0-11.0						515	205	35	
A376Gr.TP304	[Cm. A312Gr.TP304]															
JIS G3459 SUS304TP	0.08	1	2	0.04	0.03	18.00-20.0	8.0-11.0						520	205	35	08X18H10T, ГОСТ 9940, ГОСТ 9941
A312Gr.TP304H	0.04-0.10	0.75	2	0.04	0.03	18.00-20.0	8.0-11.0						515	205	35	
JIS G3459 SUS304HTP	0.04-0.10	0.75	2	0.04	0.03	18.00-20.0	8.0-11.0						520	205	35	
A312Gr.TP 304L	0.035	0.75	2.00	0.04	0.03	18.0-20.0	8.00-13.0						485	170	35	03X18H11, ТУ 14-3-1401
DIN 2462 X2CrNi 19 11	0.03	1	2	0.045	0.03	18.0-20.0	10.0-12.5						460-680	180	37	
A312Gr.TP316	0.08	0.75	2	0.04	0.03	16.00-18.0	11.0-14.0	2.00-3.00					515	205	35	
JIS G3459 SUS316TP	0.08	1	2	0.04	0.03	16.00-18.0	10.0-14.0	2.00-3.00					520	205	35	10X17H13M2T, ГОСТ 9940
A312Gr.TP316H	0.04-0.10	1	2	0.045	0.03	16.00-18.0	11.0-14.0	2.00-3.00					515	205	35	
JIS G3459 SUS316HTP	0.04-0.10	0.75	2	0.03	0.03	16.00-18.0	11.0-14.0	2.00-3.00					520	205	35	
A312Gr.TP316L	0.035	0.75	2	0.04	0.03	16.00-18.0	10.0-15.0	2.00-3.00					485	170	35	03X17 H14M3, ТУ 14-3-396, ТУ 14-3-1348, ТУ 14-3-1357
DIN 2462 X2CrNiMo17-13-2	0.03	1.00	2.00	0.045	0.03	17.0-18.5	11.0-14.0	2.00-2.50					490-690	190	35	
JIS G3459 SUS316LTP	0.03	1	2	0.04	0.03	16.00-18.0	12.0-16.0	2.00-3.00					480	175	35	
A312Gr.TP321	0.08	0.75	2	0.04	0.03	17.0-20.0	9.00-13.0						515	205	35	12X18H12T, ТУ 14-3-460
DIN 2462 X6CrNiTi 18 10	0.08	1	2	0.045	0.03	17.0-19.0	9.0-12.0				5x(C+N) min., 0.80 max.		500-730	200	35	
JIS G3459 SUS321TP-A	0.08	1	2	0.04	0.03	17.0-19.0	9.00-13.0						520	205	35	
A312Gr.TP347	0.08	0.75	2	0.04	0.03	17.0-20.0	9.00-13.0						515	205	35	08X18H12Б, ГОСТ 9940, ГОСТ 9941
A376Gr.TP347H	0.04-0.10	0.75	2	0.04	0.02	17.0-20.0	9.00-13.0						515	205	25	
DIN 2462 X6CrNiNb 18 10	0.08	1	2	0.045	0.03	17.0-19.0	9.0-12.0			(Cb:10xC min., 1.00 max.)			510-740	205	35	
JIS G3459 SUS347TP	0.08	1	2	0.04	0.03	17.0-19.0	9.00-13.0						520	205	35	10Г2, ГОСТ 550, ГОСТ 8731, ГОСТ 8733
A333Gr.1	0.3	-	0.40-1.06	0.025	0.025								380	205	35	
A333Gr.6	0.3	0.1	0.29-1.06	0.025	0.025								415	240	30	
DIN 1.1101 TTSt 35	0.17	0.35	min. 0.40	0.03	0.025					min. 0.020						15X5M, ГОСТ 550
JIS G3460 STPL380	0.25	0.35	1.35	0.035	0.035								380	205	35	
A335Gr.P5	0.15	0.5	0.30-0.60	0.025	0.025	4.00-6.00		0.45-0.65					415	205	30	
DIN 1.7362 I2CrMo 19 5	0.08-0.15	0.5	0.30-0.60	0.025	0.02	4.00-6.00		0.45-0.65					590-740	390	17	Х9М, ТУ 14-3-457
JIS G3458 STPA25	0.15	0.5	0.30-0.60	0.03	0.03	4.00-6.00		0.45-0.65					412	206	30	
A335Gr.P9	0.15	0.25-100	0.30-060	0.025	0.025	8.00-10.00		0.90-1.10					415	205	30	
DIN 1.7386 X12CrMo9-1	0.07-0.15	0.25-1.00	0.30-0.60	0.025	0.02	8.00-10.0		0.90-1.10					410	205	30	15XM, ТУ14-3-460
JIS G3462 STBA26	0.15	0.25-1.00	0.30-0.60	0.03	0.03	8.00-10.00		0.90-1.10					415	205	30	
A335Gr.P11	0.05-0.15	0.50-1.00	0.30-0.60	0.025	0.025	1.00-1.50		0.44-0.65					415	205	30	
SA335Gr.P11	[Cm. A335Gr.P11]															1X2M1, ГОСТ 550
JIS G3458 STPA23	0.15	0.50-1.00	0.30-0.60	0.03	0.03	1.00-1.50		0.45-0.65					410	205	30	
A335Gr.P22	0.05-0.15	0.5	0.30-0.60	0.025	0.025	1.90-2.60		0.87-1.13					415	205	30	
JIS G3458 STPA24	0.15	0.5	0.30-0.60	0.03	0.03	1.90-2.60		0.87-1.13					410	205	30	There is no equivalent. аналога нет
B165(N04400)	0.3	0.5	2		0.024		min. 63.0		28.0-34.0		(Fe: max. 2.5)		480	195	35	
JIS H4552 NCuT	0.3	0.5	2		0.024		63.0-70.0		RE		(Fe: max. 2.5)		481		35	
B167(N06600)	0.15	0.5	1		0.015	14.00-17.0	min. 72.0		0.5		(Fe: 6.0-10.0)		550	205	35	ХН78Т, ГОСТ 5632
JIS G4903 NCF600TP	0.15	0.5	1	0.03	0.015	14.00-17.0	min. 72.0		0.5		(Fe: 6.0-10.0)		550	205	35	
B407(N08800)	0.1	1	1.5		0.015	19.00-23.0	30.0-35.0		0.75	0.15-0.60	0.15-0.60		450	170	30	
JIS G4903 NCF800TP	0.1	1	1.5	0.03	0.015	19.00-23.0	30.0-35.0		0.75	0.15-0.60	0.15-0.60		450	175	30	ХН32Т, ГОСТ 5632

Material Comparison Table : ASME-ASTM-JIS-GOST

STEEL GRADE МАРКА СТАЛИ	CHEMICAL COMPOSITION ХИМИЧЕСКИЙ СОСТАВ												MECHANICAL PROPERTIES МЕХАНИЧЕСКИЕ СВОЙСТВА			STEEL GRADE as per GOST, OST, TU МАРКА СТАЛИ по ГОСТ, OCT, TY
	Carbon	Silicon	Manganese	Phosphorous	Sulfur	Chromium	Nickel	Molybdenum	Copper	Aluminium	Titanium	Vanadium	Tensile strength Предел прочности σ _B min (N/mm ²)	Yield point Предел текучести σ _T min (N/mm ²)	Elongation Относительное удлинение δ %	
	Углерод C max. %	Кремний Si max. %	Марганец Mn max. %	Фосфор P max. %	Сера S max. %	Хром Cr max. %	Никель Ni max. %	Молибден Mo max. %	Медь Cu max. %	Алюминий Al max. %	Титан Ti max. %	Ванадий V max. %				
Pipe (Welded) Трубы (сварные)																
A358Gr.304 CL.1	[См. A240-Type 304]															08X18H10T, ГОСТ 11068
A358Gr.316 CL.1	[См. A240-Type 316]															10X17H13M2T, ГОСТ 11068
A358Gr.316L CL.1	[См. A240-Type 316L]															03X17H14M3, ГОСТ 11068
A358Gr.316H CL.1	[См. A240-Type 316H]															10X17H13M2T, ГОСТ 11068
A409Gr.TP304	0.08	1.00 max.	2.00	0.045	0.03	18.0-20.0	8.0-11.0						515	205		08X18H10T, ГОСТ 11068
A409Gr.TP316	0.08	1.00 max.	2.00	0.045	0.03	16.0-18.0	10.0-14.0	2.00-3.00					515	205		10X17H13M2T, ГОСТ 11068
A671Gr.CC60 CL.12	[См. A516Gr.60]															17Г1С, ГОСТ 20295, ТУ 14-3-620
A672Gr.A55 CL.13	[См. A285Gr.C]															BCr3en, ГОСТ 10706
A672Gr.B55 CL.22	[См. A515Gr.55]															BCr3en, ГОСТ 10706
A672Gr.B65 CL.13	[См. A515Gr.65]															17ГC, ТУ 14-3-620
A672Gr.B70 CL.12	[См. A515Gr.70]															17Г1С, ГОСТ 20295, ТУ 14-3-620
A672Gr.C65 CL.22	[См. A516Gr.65]															17ГC, ТУ 14-3-620
A691Gr.1.1/4CR CL.22	[См. A387Gr.11 CL.2]															15XM, ТУ 14-3-460
A691Gr.5CR CL.12	[См. A387Gr.5]															15X5M, ГОСТ 550
A691Gr.9CR CL.22	[См. A387Gr.9]															X9M, ТУ 14-3-457
B409(N08800)	0.1	1	1.5		0.015	19.00-23.00	30.0-35.0		0.75	0.15-0.6	0.15-0.60		520	205	30	XH32T, ТУ 14-3-489
B514(N08800)	0.1	1	1.5		0.015	19.00-23.0	30.0-35.0		0.75	0.15-0.60	0.15-0.60		520	207	30	
Tube Трубки																
A179	0.06-0.18	-	0.27-0.63	0.035	0.035								(Not specified) (Не нормируется)			Сталь 20, ГОСТ 8733
DIN 2391 St35 GBK	0.17	0.35	min. 0.40	0.05	0.05								315	157	25	
JIS G3461 STB340	0.18	0.35	0.30-0.60	0.035	0.035								340	175	35	
A200Gr.T11	0.05-0.15	0.50-1.00	0.30-0.60	0.025	0.025	1.00-1.50		0.44-0.64					414	172	30	15XM, ТУ 14-3-460
DIN 17175 13CrMo44	0.10-0.18	0.10-0.35	0.40-0.70	0.035	0.035	0.7-1.10		0.40-0.65					440-590	290	22	
JIS G3462 STBA23	0.15	0.50-1.00	0.30-0.60	0.03	0.03	1.00-1.50		0.45-0.65					410	205	30	
A210Gr.A1	0.27	0.1	0.93	0.035	0.035								415	255	30	Сталь 20, ГОСТ 8731, ГОСТ 8733
DIN 2391 St45 GBK	0.21	0.35	min. 0.40	0.05	0.05								390	195	21	
JIS B3461 STB410	0.32	0.35	0.30-0.80	0.035	0.035								410	255	25	
A213Gr.T11	0.05-0.15	0.50-1.00	0.30-0.60	0.025	0.025	1.00-1.50		0.45-0.65					415	205	30	15XM, ТУ 14-3-460
DIN 17175 13CrMo44	0.10-0.18	0.10-0.35	0.40-0.70	0.035	0.035	0.7-1.10		0.40-0.65					440-590	290	22	
JIS G3462 STBA23	0.15	0.50-1.00	0.30-0.60	0.03	0.03	1.00-1.50		0.45-0.65					410	205	30	
A213Gr.TP304	0.08	1	2	0.04	0.03	18.00-20.0	8.00-11.0						515	205	35	08X18H10T, ГОСТ 9940, ГОСТ 9941
DIN 17440 X5CrNi18 10	0.07	1	2	0.045	0.03	17.0-20.0	8.5-10.0						500-700	185	45	
A213Gr.TP 321	0.08	0.75	2.00	0.04	0.03	17.0-20.0	9.00-13.0				5x(C+N) min., 0.60 max.		515	205	35	12X18H12T, ТУ 14-3-460
DIN 17440 X10CrNiTi18 9	0.1	1	2	0.045	0.03	17.0-19.0	9.0-11.5				5xC		500-750	205	35	
A268Gr.TP410	0.15	0.75	1	0.04	0.03	11.5-13.5	0.5						415	205	20	12X13, ГОСТ 9941
DIN 17440 X10Cr13	0.08-0.12	1	1	0.045	0.03	12.0-14.0							550-700	300	20	
A269Gr.TP316	0.08	0.75	2.00	0.04	0.03	16.0-18.0	11.0-14.0	2.0-3.0								10X17H13M2T, ГОСТ 5632
DIN 1.4401, X5CrNiMo17-12-2	0.07	1.0	2.00	0.045	0.03	16.5-18.5	10.5-13.5	2.0-2.5					510-710	205	40	
A334Gr.1	0.3	-	0.40-1.06	0.025	0.025								380	205	35	10Г2, ГОСТ 8731, ГОСТ 8733
DIN 17173 TTS35N	0.17	0.35	min. 0.40	0.045	0.045								343-441	225	25	
JIS G3464 STBL380	0.25	0.35	1.35	0.035	0.035								380	205	35	
SB111 C68700	(Pb:0.07)	(Fe:0.06)	0.005	(Zn:Re)	(As:0.02-0.035)				76.0-79.0	1.8-2.5			344	124	-	ЛАМш 77-2-0,05, ГОСТ 21646
DIN1785 CuZn20Al2	(Pb:0.07)	(Fe:0.07)	0.005	(Zn:Re)	(As:0.02-0.035)				76.0-79.0	1.8-2.3						

Material Comparison Table : ASME-ASTM-JIS-GOST

STEEL GRADE МАРКА СТАЛИ	CHEMICAL COMPOSITION ХИМИЧЕСКИЙ СОСТАВ												MECHANICAL PROPERTIES МЕХАНИЧЕСКИЕ СВОЙСТВА			STEEL GRADE as per GOST, OST, TU МАРКА СТАЛИ по ГОСТ, ОСТ, ТУ
	Carbon	Silicon	Manganese	Phosphorous	Sulfur	Chromium	Nickel	Molybdenum	Copper	Aluminium	Titanium	Vanadium	Tensile strength Предел прочности σ _B min (N/mm ²)	Yield point Предел текучести σ _T min (N/mm ²)	Elongation Относительное удлинение δ %	
	Углерод C max. %	Кремний Si max. %	Марганец Mn max. %	Фосфор P max. %	Серa S max. %	Хром Cr max. %	Никель Ni max. %	Молибден Mo max. %	Медь Cu max. %	Алюминий Al max. %	Титан Ti max. %	Ванадий V max. %				
Fitting Фитинги (трубопроводные)																
A234Gr.WPB	0.3	min. 0.10	0.29-1.06	0.05	0.058								415-585	240	30	Сталь 20, ГОСТ 8731, ГОСТ 8733
JIS G3454 STPG370	0.25	0.35	0.30-1.00	0.04	0.04								370	215	30	
SA234Gr.WPB	[Cм. A234Gr.WPB]															Сталь 20, ГОСТ 8731, ГОСТ 8733
A234Gr.WPB-W	0.3	min. 0.10	029-106	0.05	0.058								415-585	240	30	
JIS G3454 STPG370	0.25	0.35	030-100	0.04	0.04								370	215	30	
A234Gr.WP5	0.15	0.5	0.30-0.60	0.04	0.03	4.00-6.0		0.44-0.65					415-585	205	22	15X5M, ГОСТ20072
JIS G3458STPA25	0.15	0.5	0.30-0.60	0.03	0.03	4.00-6.0		0.45-0.65					412	206	30	
A234Gr.WP9	0.15 max.	0.25-1.00	0.30-0.60	0.03	0.03	8.0-10.0		0.90-1.10					585-760	415	30	X9M, ТУ 14-3-457
A403Gr.WP304	0.08	1	2	0.045	0.03	18.00-20.0	8.00-11.0						515	205	28	08X18H10T, ГОСТ 9940, ГОСТ 9941
JIS G3459 SUS304TP	0.08	0.75	2	0.04	0.03	18.00-20.0	8.00-11.0						520	205	35	
A234Gr.WP11 CL.1	0.05-0.15	0.50-1.00	0.30-0.60	0.03	0.03	1.00-1.50		0.44-0.65					415-585	205	20	15XM, ТУ 14-3-460
SA234Gr.WP11 CL.1	[Cм. A234Gr.WP11 CL.1]															
JIS G3458 STPA23	0.15	0.50-1.00	0.30-0.60	0.025	0.025	1.00-1.50		0.44-0.65					410	205	30	
A234Gr.WP11b CL.1	0.05-0.15	0.50-1.00	0.30-0.60	0.03	0.03	1.00-1.50		0.44-0.65					415-585	205	20	15XM, ГОСТ4543
JIS G3458 STPA23	0.15	0.50-1.0	0.30-0.60	0.03	0.03	1.00-1.50		0.45-0.65					412	206	30	
A234Gr.WP22 CL.1	0.05-0.15	0.5	0.30-0.60	0.04	0.04	1.90-2.60		0.87-1.13					415-585	205	20	X2M1, ГОСТ 550
SA234Gr.WP22 CL.1	[Cм. A234Gr.WP22 CL.1]															
JIS G3458 STPA24	0.05-0.15	0.5	0.30-0.60	0.03	0.03	1.90-2.60		0.87-1.13					410	205	30	
A403Gr.WP304	0.08	1	2.00	0.045	0.03	18.00-20.0	8.00-11.0						515	205	28	08X18H10T, ГОСТ 5632
JIS G3459 SUS304TP	0.08	1	2	0.04	0.03	18.00-20.0	8.0-11.0						520	205	35	
A403Gr.WP304H	0.04-0.10	0.75	2	0.045	0.03	18.00-20.0	8.00-11.0						515	205	28	08X18H10T, ГОСТ 5632
JIS G3459 SUS304HTP	0.40-0.10	0.75	2	0.04	0.03	18.00-20.0	8.00-11.0						520	205	35	
A403Gr.WP316	0.08	1	2	0.045	0.045	16.00-18.0	10.00-14.0						515	205	28	10X17H13M2T, ГОСТ 5632
JIS G3459 SUS316TP	0.08	1	2	0.04	0.03	16.00-18.0	10.00-14.0	2.00-3.00					520	205	35	
A403Gr.WP316H	0.04-0.10	1	2	0.045	0.03	16.00-18.0	10.00-14.0	2.00-3.00					515	205	28	10X17H13M2T, ГОСТ 5632
JIS G3459 SUS316HTP	0.04-0.10	0.75	2	0.03	0.03	16.00-18.0	11.00-14.0	2.00-3.00					520	205	35	
A403Gr.WP316L	0.035	1	2	0.045	0.03	16.0-18.0	10.0-16.0	2.00-3.00					485	170	28	03X17H14M3, ТУ 14-3-396, ТУ 14-3-1348
A403Gr.WP321	0.08	1	2	0.045	0.03	17.00-19.0	9.00-12.00						515	205	28	08X18H10T, ГОСТ 5632
JIS G3459 SUS321TP	0.08	1	2	0.04	0.03	16.00-18.0	9.00-13.0	2.00-3.00					520	205	35	
A403Gr.WP347H	0.04-0.1	1	2	0.045	0.03	17.0-20.0	9.0-13.0						515	205	28	08X18H12B, ГОСТ 9940, ГОСТ 9941
A420Gr.WPL6	0.3	min. 0.10	039-135	0.03	0.03								415-585	240	22	10Г2, ГОСТ 8731, ГОСТ 8733
JIS G3460 STPL380	0.25	0.35	1.35	0.035	0.035								380	205	35	
A420Gr.WPL6-W	0.3	min. 0.10	039-135	0.03	0.03								415-585	240	22	10Г2, ГОСТ 8731, ГОСТ 8733
JIS G3460 STPL380	0.25	0.35	1.35	0.035	0.035								380	205	35	
B366Gr.WPNC(N04400)	[Cм. B165 N04400]															There is no equivalent. аналога нет
B366Gr.WPNCI(N06600)	[Cм. B167 N06600]															XH78T, ГОСТ 5632
B366Gr.WPNCI-W(N06600)	[Cм. B168 N06600]															XH78T, ГОСТ 5632
B366Gr.WPNIC(N08800)	[Cм. B407 N08800]															XH32T, ТУ 14-3-489
B366Gr.WPNIC-W(N08800)	[Cм. B409 N08800]															XH32T, ТУ 14-3-489

Material Comparison Table : ASME-ASTM-JIS-GOST

STEEL GRADE МАРКА СТАЛИИ	CHEMICAL COMPOSITION ХИМИЧЕСКИЙ СОСТАВ												MECHANICAL PROPERTIES МЕХАНИЧЕСКИЕ СВОЙСТВА			STEEL GRADE as per GOST, OST, TU МАРКА СТАЛИ по ГОСТ, ОСТ, ТУ
	Carbon	Silicon	Manganese	Phosphorous	Sulfur	Chromium	Nickel	Molybdenum	Copper	Aluminium	Titanium	Vanadium	Tensile strength Предел прочности σ _B min (N/mm ²)	Yield point Предел текучести σ _T min (N/mm ²)	Elongation Относительное удлинение δ %	
	Углерод C max. %	Кремний Si max. %	Марганец Mn max. %	Фосфор P max. %	Сера S max. %	Хром Cr max. %	Никель Ni max. %	Молибден Mo max. %	Медь Cu max. %	Алюминий Al max. %	Титан Ti max. %	Ванадий V max. %				
Forged piece Поковки																
A105	0.35	0.10-0.35	0.60-1.05	0.035	0.04	(0.40)	(0.40)	(0.12)	(0.40)			(0.05)	485	250	30	16ГС кп 25, ГОСТ 8479
DIN 2528 C21	0.18-0.23	0.15-0.35	0.80-1.35	0.035	0.03	0.3										
JIS G3202 SFVC2A	0.3	0.35	0.40-1.00	0.03	0.03								490-640	245	30	
SA105	[Cm. A105]															16ГС кп 25, ГОСТ 8479
A182Gr.F5	0.15	0.5	0.30-0.80	0.04	0.04	4.00-6.00	0.5	0.44-0.65					485	275	20	15X5M, ГОСТ 8479
DIN 17176, 12CrMo19 5	0.08-0.15	0.5	0.30-0.60	0.025	0.02	4.00-6.00		0.45-0.65					590-740	390	17	
JIS G3203 SFVA F5B	0.15	0.5	0.30-0.60	0.03	0.03	4.00-6.00		0.45-0.65					480-660	275	18	
A182Gr.F6a CL.1	0.15	1.00	1.00	0.04	0.03	11.50-13.50	0.5						485	275	18	12X13, ГОСТ 25054
A182Gr.F9	0.15	0.50-1.00	0.30-0.60	0.03	0.03	8.00-10.00		0.90-1.10					585	380	20	There is no equivalent. аналога нет
JIS G3203 SFVA F9	0.15	0.50-1.00	0.30-0.60	0.03	0.03	8.00-10.0		0.90-1.10					590-760	380	18	
A182Gr.F9	0.15	0.50-1.00	0.30-0.60	0.03	0.03	8.00-10.00		0.90-1.10					585	380	20	нет аналога
DIN EN10222-2, X10CrMoVNb9-1	0.08-0.12	0.20-0.50	0.30-0.60	0.02	0.01	8.00-9.50	0.4	0.85-1.05			(Nb:0.06-0.10)	0.18-0.25				
A182Gr.F11 CL.1	0.05-0.15	0.50-1.00	0.30-0.60	0.03	0.03	1.00-1.50		0.44-0.65					415	205	20	15XM, ГОСТ 8479
SA182Gr.F11 CL.1	[Cm. A182Gr.F11 CL.1]															
DIN EN10213-2 G17Cr-Mo 5-5	0.15-0.20	0.6	0.50-1.00	0.02	0.02	1.00-1.50		0.45-0.65								
JIS G3203 SFVA F11A	0.2	0.50-1.00	0.30-0.80	0.03	0.03	1.00-1.50		0.45-0.65					480-660	275	18	
A182Gr.F11 CL.2	0.10-0.20	0.50-1.00	0.30-0.80	0.04	0.04	1.00-1.50		0.44-0.65					485	275	20	12XM, 15XM, ГОСТ 8479
DIN EN10213-2 G17-Mo 5-5	0.15-0.20	0.6	0.50-1.00	0.02	0.02	1.00-1.50		0.45-0.65								
JIS G3202 SFVA F11A	0.2	0.50-1.00	0.30-0.80	0.03	0.03	1.00-1.50		0.45-0.65					480-660	275	18	
A182Gr.F22 CL.1	0.05-0.15	0.5	0.30-0.60	0.04	0.04	2.00-2.50		0.87-1.13					415-205	415	18	10X2M1A-A, ТУ 302.02.121
SA182Gr.F22CL.1	[Cm. A182Gr.F22 CL.1]															
DIN 17176 12CrMo9-10	0.1-0.15	0.3	0.30-0.80	0.015	0.015	2.00-2.50	0.3	0.90-1.10	0.2	min. 0.01						
JIS G3203 SFVA F22B	0.15	0.5	0.30-0.60	0.03	0.03	2.00-2.50		0.90-1.10					520-690	315	18	
A182Gr.F22 CL.3			0.05-0.15	0.5	0.30-0.60	0.04	0.04	2.00-2.50		0.87-1.13			515	310	20	10X2M1A-A, ТУ 608.13.39, ТУ 302.02.121
DIN 17176 12CrMo9-10			0.1-0.15	0.3	0.30-0.80	0.015	1	2.00-2.50	0.3	0.90-1.10	0.2	min. 0.01				
JIS G3202 SFVA F22B			0.15	0.5	0.30-0.60	0.03	1	2.00-2.50		0.90-1.10			520-690	315		
A182Gr.F304	0.08	1	2	0.04	0.04	18.00-20.0	8.00-11.0						515	205	30	08X18H10T, ГОСТ 25054
DIN 17440 X5CrNi18 10	0.07	1	2	0.045	0.03	17.0-20.0	8.5-10.0						500-700	185	45	
JIS G3124 SUS F304	0.08	1	2	0.04	0.03	18.00-20.0	8.00-11.0						520	205	43	
A182Gr.F304H	0.04-0.10	1	2	0.04	0.03	18.00-20.0	8.00-11.0						515	205	30	08X18H10T, ГОСТ 25054
JIS G3124 SUS F314H	0.04	1	2	0.04	0.03	18.00-20.0	8.00-12.0						520	205	43	
A182Gr.F316	0.08	1	2	0.04	0.03	16.00-18.0	10.00-14.0	2.00-3.00					515	205	30	10X17H13M2T, ГОСТ 25054
DIN 17440 X5CrNiMo 17-12-2	0.07	1	2	0.045	0.03	16.5-18.5	10.5-13.5	2.0-2.5					510-710	205	40	
JIS G3214 SUS F316	0.08	1	2	0.04	0.03	16.00-18.0	10.00-14.0	2.00-3.00					520	205	43	
A182Gr.F316H	0.04-0.10	0.5	2	0.045	0.03	16.00-18.00	10.0-14.0	2.00-3.00					515	205	30	10X17H13M2T, ГОСТ 25054
JIS G3214 SUS F316H	0.04-0.10	0.5	2	0.04	0.03	16.00-18.00	10.0-14.0	2.00-3.00					520	205	43	
A182Gr.F316L	0.035	1	2	0.045	0.03	16.00-18.0	10.00-15.0	2.00-3.00					485	170	30	03X17H14M3, ГОСТ 25054
DIN 17440, X2CrNiMo17-13-2	0.03	1.00	2.00	0.045	0.03	16.5-18.5	11.0-14.0	2.00-2.50					490-690	190	40	
JIS G3214 SUS F316L	0.03	1	2	0.04	0.03	16.00-18.0	12.00-15.0	2.00-3.00					480	175	29	
A182Gr.F316L	0.035	1.00	2	0.04	0.03	16.00-18.00	10.00-15.00	2.00-3.00					485	170	30	03X17H14M3, ГОСТ 25054
DIN 17440, X2CrNiMo17-13-2	0.03	1.00	2.00	0.045	0.03	16.5-18.5	11.0-14.0	2.00-2.50					490-690	190	40	
A182Gr.F321	0.08	1.00	2	0.04	0.03	min. 17.0	9.00-12.00				5x(C+N) min., 0.70 max.		515	205	40	08X18H10T, ГОСТ 25054
DIN 17440 X6CrNiTi 18-10	0.08	1.00	2.00	0.045	0.03	17.0-19.0	9.00-12.0				5xC-0.8		500-730	200	35	
A182Gr.F347	0.08	1.00	2.00	0.04	0.03	17.00-20.00	9.00-13.00			(Cb:10xC min., 1.10 max.)			515	205	30	08X18H10T, ГОСТ 25054
A182Gr.F347H	0.04-0.1	1.00 max.	2	0.045	0.03	17.0-20.0	9.0-13.0			(Cb:8xC min., 1.10 max.)						08X18H10T, ГОСТ 25054
DIN 17440 X6CrNiNb 18-10	0.08	1.00	2.00	0.045	0.03	17.0-19.0	9.00-12.0			(Cb:8xC min., 1.00 max.)			510-740	205	35	
A266 CL.4	0.3	0.15-0.35	0.80-1.35	0.025	0.025								485-655	250	20	16ГС кп 25, ГОСТ 8479
JIS G3202 SFVC 2B	0.3	0.35	0.70-1.35	0.03	0.03								490-640	245	18	
A336 CL.F11	0.10-0.20	0.50-1.00	0.30-0.80	0.025	0.025	1.00-1.50		0.45-0.65					485-660	275	20	15XM кп 28, ГОСТ 8479
JIS G3203 SFVA 11A	0.2	0.50-1.00	0.30-0.80	0.03	0.03	1.00-1.50		0.45-0.65					480-660	275	18	
A336 CL.F22	0.05-0.15	0.5	0.30-0.60	0.025	0.025	2.00-2.50		0.90-1.10					515-690	310	19	10X2M1A, ТУ 302.02.12
JIS G3203 SFVA F22B	0.15	0.5	0.30-0.60	0.03	0.03	2.00-2.50		0.90-1.10					520-690	315	18	
A350Gr.LF2	0.3	0.15-0.30	1.35	0.035	0.04	0.3	0.4	0.12	0.4			0.03	485-655	250	22	09Г2С кп 25, ГОСТ 8479
DIN EN10025 S355J2G3	0.2	0.55	1.6	0.035	0.035								490-630	345	21	
JIS G3205 SFL1	0.3	0.35	1.35	0.03	0.03								440-590	225	22	
B564(N04400)	0.3	0.5	2		0.024		min. 63.0		28.0-34.0				483	172	35	НМЖМц 28-2,5-1,5-2,5-1
B564(N06600)	0.15	0.5	1		0.015	14.00-17.0	min. 72.0		0.5				552	241	30	XH78T, ГОСТ 5632
B564(N08800)	0.1	1	1.5		0.015	19.00-23.0	30.0-35.0		0.75	0.15-0.60	0.15-0.60		517	207	30	XH32T, ГОСТ 5632

Material Comparison Table : ASME-ASTM-JIS-GOST

STEEL GRADE МАРКА СТАЛИ	CHEMICAL COMPOSITION ХИМИЧЕСКИЙ СОСТАВ												MECHANICAL PROPERTIES МЕХАНИЧЕСКИЕ СВОЙСТВА			STEEL GRADE as per GOST, OST, TU
	Carbon	Silicon	Manganese	Phosphorous	Sulfur	Chromium	Nickel	Molybdenum	Copper	Aluminium	Titanium	Vanadium	Tensile strength	Yield point	Elongation	
	Углерод C max. %	Кремний Si max. %	Марганец Mn max. %	Фосфор P max. %	Сера S max. %	Хром Cr max. %	Никель Ni max. %	Молибден Mo max. %	Медь Cu max. %	Алюминий Al max. %	Титан Ti max. %	Ванадий V max. %	Предел прочности σ _B min (N/mm ²)	Предел текучести σ _T min (N/mm ²)	Относительное удлинение δ %	
Casting Отливки																
A216Gr.WCB	0.3	0.6	1	0.04	0.045	0.5	0.5	0.2	0.3			0.03	485-655	250	22	25Л, ГОСТ 977
DIN 1681 GS-45.3	0.25												441	225	22	
JIS G5102 SCW480	0.22	0.8	1.5	0.04	0.04	0.5	0.05						480	275	20	
JIS G5151 SCPH2	0.3	0.6	1	0.04	0.04											
SA216Gr.WCB	[Cm. A216Gr.WCB]															25Л, ГОСТ 977
A217Gr.C9	0.2	0.75	0.40-0.70	0.04	0.045	4.0-6.50	0.5	0.45-0.65					620-795	415	18	20X5МЛ, ГОСТ 977
JIS G5151 SCPH61	0.2	0.75	0.50-0.80	0.04	0.04	4.0-6.50	0.5	0.45-0.65	0.5				620	410	17	
A217Gr.C12	0.2	1	0.35-0.65	0.04	0.045	8.00-10.00	0.5	0.90-1.20	0.5				620-795	415	18	20X8ВЛ, ГОСТ 977
A217Gr.WC6	0.05-0.20	0.6	0.50-0.80	0.04	0.045	1.00-1.50	0.5	0.45-0.65	0.5				485-655	275	35	20XMЛ, ГОСТ 977
JIS G5151 SCPH21	0.2	0.6	0.50-0.80	0.04	0.04	1.00-1.50	0.5	0.45-0.65	0.5				480	275	17	
A217Gr.WC9	0.05-0.18	0.6	0.40-0.70	0.04	0.045	2.00-2.75	0.5	0.90-1.20	0.5				485-655	275	35	20X5МЛ, ГОСТ 977
JIS G5151 SCPH32	0.2	0.6	0.50-0.80	0.04	0.04	2.00-2.75	0.5	0.90-1.20	0.5				480	275	17	
A297Gr.HF	0.20-0.40	2	2	0.04	0.04	18.0-23.0	8.0-12.0	0.05					485	240	25	40X24H12CЛ, ГОСТ 977
A297Gr.HK	0.02-0.60	2	2	0.04	0.04	24.0-28.0	18.0-22.0	0.05					450	240	10	20X25H12C2Л, ГОСТ 977
A351Gr.CF3M	0.03	1.5	1.5	0.04	0.04	17.0-21.0	9.0-13.0	2.0-3.0					485	205	30	12X18H12M3ТЛ, ГОСТ 977
JIS G5121 SCS16A	0.03	1.5	1.5	0.04	0.04	17.0-21.0	9.0-13.0	2.0-3.0					480	205	33	
A351Gr.CF8	0.08	2	1.5	0.04	0.04	18.00-21.0	8.00-11.0	0.05					485	205	35	10X18H9Л, ГОСТ 977
DIN 17445 G-X6CrNi189	0.07	2	1.5	0.045	0.03	18.0-20.0	9.0-11.0						440-640	175	20	
JIS G5121 SCS13A	0.08	2	1.5	0.04	0.04	18.00-21.0	8.00-11.0						480	205	33	
A351Gr.CF8C	0.08	2	1.5	0.04	0.04	18.00-21.0	9.00-12.0	0.5	(Nb:8xC-1.00)				485	205	30	10X18H9ТЛ, ГОСТ 977
DIN 14552 G-X5 CrNiNb189	0.06	1.5	1.5	0.045	0.03	18.0-20.0	9.0-11.0		(Nb:8xC)				440-640	175		
JIS G5121 SCS21	0.08	2	2	0.04	0.04	18.00-21.0	9.00-12.0		(Nb:10xC-1.35)				480	205	28	
A351Gr.CF8M	0.08	1.5	1.5	0.04	0.04	18.00-21.0	9.00-12.0	2.00-3.00					485	205	30	12X18H12M3ТЛ, ГОСТ 977
DIN 17445 G-X6CrNiMo1810	0.07	1.5	0.045	0.03	18.0-20.0	10.0-12.0	2.0-5.0						440-640	185	20	
JIS G5121 SCS14A	0.08	1.5	1.5	0.04	0.04	18.00-21.0	9.00-12.0	2.00-3.00					480	205	33	
A352Gr.LCB	0.3	0.6	1	0.04	0.045	0.5	0.5	0.2	0.3			0.03	450-620	240	35	25Л, ГОСТ 977
JIS G5152 SCPL1	0.3	0.6	1	0.04	0.04	0.25	0.5		0.5				450	245	21	
A447IP.II	0.20-0.45	1.75	2.5	0.05	0.05	23.0-28.0	10.00-14.00						550		4	40X24H12CЛ, ГОСТ 977
A494Gr.CY40	0.4	3	1.5	0.03	0.03	14.00-17.0					(Fe: max. 11.0)		485	195	30	There is no equivalent. аналога нет
A560Gr.50Cr-50Ni-Cb	0.1	0.5	0.3	0.02	0.02	47.0-52.0	balance			(Cb:1.4-1.7%)			550	345	5	There is no equivalent. аналога нет

Material Comparison Table : ASME-ASTM-JIS-GOST

STEEL GRADE МАРКА СТАЛИ	CHEMICAL COMPOSITION ХИМИЧЕСКИЙ СОСТАВ												MECHANICAL PROPERTIES МЕХАНИЧЕСКИЕ СВОЙСТВА			STEEL GRADE as per GOST, OST, TU МАРКА СТАЛИ по ГОСТ, ОСТ, ТУ
	Carbon	Silicon	Manganese	Phosphorous	Sulfur	Chromium	Nickel	Molybdenum	Copper	Aluminium	Titanium	Vanadium	Tensile strength	Yield point	Elongation	
	Углерод C max. %	Кремний Si max. %	Марганец Mn max. %	Фосфор P max. %	Сера S max. %	Хром Cr max. %	Никель Ni max. %	Молибден Mo max. %	Медь Cu max. %	Алюминий Al max. %	Титан Ti max. %	Ванадий V max. %	Предел прочности σ _B min (N/mm ²)	Предел текучести σ _T min (N/mm ²)	Относительное удлинение δ %	
Bolt Болты																
A193Gr.B7	0.36-0.47	0.15-0.35	0.65-1.10	0.04	0.04	0.75-1.20		0.15-0.25					860	720	16	30XMA, ГОСТ 4543
DIN 17240 24CrMo5	0.20-0.28	0.15-0.35	0.50-0.80	0.03	0.035	0.90-1.2		0.20-0.35					600-750	440	18	
JIS G4107 SNB7	0.36-0.50	0.18-0.37	0.71-1.04	0.045	0.045	0.75-1.15		0.13-0.27					860	725	16	
SA193Gr.B7	[См. A193Gr.B7]															30XMA, ГОСТ 4543
A193Gr.B8 CL.1	0.08	1	2	0.045	0.03	18.00-20.0	8.00-10.50						515	205	30	08X18H10T, ГОСТ 20700,
DIN 267 A2CL50	0.08	1	2	0.05	0.03	17.0-20.0	8.0-13.0						500	210		ОСТ 26-2043, PTM 26-04-42
JIS G4303 SUS304	0.08	1	2	0.045	0.03	18.00-20.0	8.00-10.50									
A193Gr.B8M CL.1	0.08	1	2	0.045	0.03	16.00-18.0	10.00-14.00	2.00-3.00					515	205	30	08X17H15M3T, OCT 26-2043
DIN 267 A4CL50	0.08	1	2	0.05	0.03	16.0-18.5	10.00-14.00	2.00-3.00					500	210		
JIS G4303 SUS316	0.08	1	2	0.045	0.03	16.00-18.0	10.00-14.00	2.00-3.00					520	205	40	
A193Gr.B16	0.36-0.47	0.15-0.35	0.45-0.70	0.035	0.04	0.18-1.15		0.50-0.60				0.25-0.35	800	725	18	25X1MФ, ГОСТ 20700
DIN 17240 21CrMoV57	0.17-0.25	0.15-0.35	0.35-0.85	0.03	0.035	1.2-1.5		0.65-0.80				0.65-0.80	700-850	550	16	
JIS G 4107 SNB16	0.36-0.47	0.20-0.35	0.45-0.70	0.04	0.04	0.80-1.15		0.50-0.60				0.25-0.35	860	725	18	
A307Gr.B	-	-	-	0.04	0.05								415-690	-	18	Сталь 25, 30, OCT 26-2043
DIN 267 Bl.3 5.6	0.55			0.05	0.05								500	300	20	
JIS G4051 S25C	0.22-0.28	0.15-0.35	0.30-0.60	0.03	0.035								540	390	27	
A320Gr.B8 CL2	0.08	1	2	0.045	0.03	18.0-20.0	8.0-11.0						860	690	12	08X18H10T, OCT 26-2043
DIN 267 A2CL50	0.08	1	2	0.05	0.03	17.0-20.0	8.00-13.00									08X18H10,
JIS G4303 SUS304	0.08	1	2	0.045	0.03	18.00-20.0	8.00-10.50									
A320Gr.L7	0.38-0.48	0.15-0.35	0.75-1.00	0.035	0.04	0.8-1.1		0.15-0.25					875	735		35XM, OCT 26-2043
A453Gr.660 CL.A	0.08	1	2	0.04	0.03	13.5-16.0	24.0-27.0	1.00-1.50		0.35	1.90-2.35	0.10-0.50	895	585	15	08X15H24B4TP, ГОСТ 5632
Nut Гайки																
A194Gr.2H	0.4	0.4	1	0.04	0.05											Сталь 40, 45, OCT 26-2043
DIN 17100 St50-2				0.05	0.05											
JIS G4051 S45C	0.42-0.48	0.15-0.35	0.60-0.90	0.03	0.035											
SA194Gr.2H	[См. A194Gr.2H]															Сталь 40, 45, OCT 26-2043
A194Gr.4	0.40-0.50	0.15-0.35	0.70-0.90	0.035	0.04			0.20-0.30								35XM, OCT 26-2043
DIN 17240 24CrMo5	0.20-0.28	0.15-0.35	0.50-0.80	0.03	0.035	0.90-1.2		0.20-0.35								
A194Gr.8A	0.08	1	2	0.045	0.03	18.00-20.00	8.00-10.50									08X18H10T, OCT 26-2043,
JIS G4303 SUS304	0.08	1	2	0.045	0.03	18.00-20.00	8.00-10.50									PTM 26-04-42
A194Gr.8M	0.08	1	2	0.045	0.03	16.0-18.0	10.0-14.0	2.0-3.0								08X17H15M3T, 10X17H13M2T, OCT 26-2043
DIN 267A4CL50	0.08	1	2	0.05	0.03	16.0-18.5	10.0-14.0	2.0-3.0								
JIS G4303 SUS316	0.08	1	2	0.045	0.03	16.0-18.0	10.0-14.0	2.0-3.0								
A194Gr.8MA	0.08	1	2	0.045	0.03	16.0-18.0	10.0-14.0	2.0-3.0								10X17H13M2T, OCT 26-2043
DIN 267A4CL50	0.08	1	2	0.05	0.03	16.0-18.5	10.0-14.0	2.0-3.0								
JIS G4303 SUS316	0.08	1	2	0.045	0.03	16.0-18.0	10.0-14.0	2.0-3.0								
A320Gr.L7	0.08	1	2	0.04	0.03	13.5-16.0	24.0-27.0	1.0-1.5		0.35	1.90-2.35	0.10-0.50				08X15H24B4TP, OCT 26-2043
A563Gr.A	0.55			0.12	0.15											Сталь 45, OCT 26-2043
DIN 267 Bl.4 5	0.5			0.11	0.15											